

THE ASTROPHYSICAL JOURNAL

Founded in 1895 by George E. Hale and James E. Keeler

A. DALGARNO
Letters Editor
Center for Astrophysics

HELmut A. ABT
Editor-in-Chief
Kitt Peak National Observatory

EUGENE H. AVRETT
Deputy Letters Editor
Center for Astrophysics

Scientific Editors

GREGORY D. BOTHUN
University of Oregon

GEOFFREY BURBIDGE
University of California,
San Diego

BERNHARD M. HAISCH
Solar and Astrophysics Lab.,
Lockheed Martin

ERIC HERBST
Ohio State University

JOHN P. HUCHRA
Center for Astrophysics

JOHN T. MARiska
Naval Research
Laboratory

FULVIO MELIA
University of Arizona

STEVEN N. SHORE
Indiana University,
South Bend

EDWARD M. SION
Villanova University

CHRISTOPHER SNEDEN
University of Texas

F. W. STECKER
NASA/Goddard Space
Flight Center

JOHN H. THOMAS
University of Rochester

ETHAN T. VISHNIAC
Johns Hopkins University

STEVEN P. WILLNER
Smithsonian Astrophysical
Observatory

EDWARD L. WRIGHT
University of California,
Los Angeles

AAS PUBLICATIONS BOARD

ROBERT J. HANISCH (1996–1999), *Chairperson*
Space Telescope Science Institute

MOSHE ELITZUR (1995–1998)
University of Kentucky

KAREN S. BJORKMAN (1996–1999)
University of Toledo

DIMITRI M. MIHALAS (1996–1999)
University of Illinois

SUSAN TEREBEY (1997–2000)
Extrasolar Research Corporation

BRUCE ELMEGREEN (1998–2001)
IBM TJ Watson Research Center

ALYSSA A. GOODMAN (1998–2001)
Harvard University

Production Manager: CAROLYN CHMIEL

Publication Manager: JULIE STEFFEN

Chief Manuscript Editor: GERALDINE BRADY

Manuscript Editors: WALTER G. GLASCOFF III, BETH GARRISON, THAD A. DORIA, PAUL RUICH, SHARON JENNINGS, STEPHANIE O. NEVINS,
ELIZABETH HUYCK, PETER M. RIVARD, SHARON C. BRINKMAN, DANIEL J. SMITH,
LESLIE VONHOLLEN, AND ERIC SHUTT

Production Staff: CINDY GARRETT, AIMEE BALDRIDGE, MARGARET SCHWARTZ, MICHAEL SPINELLA, TIMOTHY HARPER,
SUWIGOON TONSIEGSOM, AND BENJAMIN GETTING

Tucson Editorial Office: JANICE SEXTON, CANDACE M. HAUSER, CHEYENNE ROSS, MEGAN MOSES, AND MARLENE SALTMAN

VOLUME 517, PART 1
1999 MAY 20 AND JUNE 1

PUBLISHED BY THE UNIVERSITY OF CHICAGO PRESS FOR
THE AMERICAN ASTRONOMICAL SOCIETY

© 1999 BY THE AMERICAN ASTRONOMICAL SOCIETY. ALL RIGHTS RESERVED.
PUBLISHED THREE TIMES A MONTH

COMPOSED BY SANTYPE INTERNATIONAL LIMITED, SALISBURY, ENGLAND
PRINTED BY CAPITAL CITY PRESS, INC.
MONTPELIER, VERMONT, U.S.A.

THE ASTROPHYSICAL JOURNAL
CONTENTS OF VOLUME 517, PART 1

1999 MAY 20, NUMBER 1

	Page
TWO-POINT CORRELATION FUNCTION OF HIGH-REDSHIFT OBJECTS: AN EXPLICIT FORMULATION ON A LIGHT-CONE HYPERSURFACE <i>Kazuhiro Yamamoto & Yasushi Suto</i>	1
RESOLVING THE Ly α FOREST <i>Greg L. Bryan, Marie Machacek, Peter Anninos, & Michael L. Norman</i>	13
ACCURACY OF MESH-BASED COSMOLOGICAL HYDROCODES: TESTS AND CORRECTIONS <i>Renyue Cen & Jeremiah P. Ostriker</i>	31
COSMOLOGICAL CONSTRAINTS FROM THE ROSAT DEEP CLUSTER SURVEY <i>Stefano Borgani, Piero Rosati, Paolo Tozzi, & Colin Norman</i>	40
N-POINT CORRELATIONS IN CDM AND Ω CDM SIMULATIONS <i>István Szapudi, Thomas Quinn, Joachim Stadel, & George Lake</i>	54
HOW UNIVERSAL ARE THE DENSITY PROFILES OF DARK HALOS? <i>A. Huss, B. Jain, & M. Steinmetz</i>	64
CONSTRAINING q_0 WITH CLUSTER GAS MASS FRACTIONS: A FEASIBILITY STUDY <i>K. Rines, W. Forman, U. Pen, C. Jones, & R. Burg</i>	70
AN AUTOMATED CLUSTER FINDER: THE ADAPTIVE MATCHED FILTER <i>Jeremy Kepner, Xiaohui Fan, Neta Bahcall, James Gunn, Robert Lupton, & Guohong Xu</i>	78
THE SURVIVAL OF THE CORE FUNDAMENTAL PLANE AGAINST GALACTIC MERGERS <i>Kelly Holley-Bockelmann & Douglas Richstone</i>	92
GALACTIC BULGE FORMATION AS A MAXIMUM INTENSITY STARBURST <i>Bruce G. Elmegreen</i>	106
RESONANT ABSORPTION IN THE ACTIVE GALACTIC NUCLEUS SPECTRA EMERGING FROM PHOTOIONIZED GAS: DIFFERENCES BETWEEN STEEP AND FLAT IONIZING CONTINUA <i>Fabrizio Nicastro, Fabrizio Fiore, & Giorgio Matt</i>	111
A COUNTERROTATING CENTRAL COMPONENT IN THE BARRED GALAXY NGC 5728 <i>F. Prada & C. M. Gutiérrez</i>	126
AN X-RAY AND OPTICAL INVESTIGATION OF THE STARBURST-DRIVEN SUPERWIND IN THE GALAXY MERGER ARP 299 <i>T. M. Heckman, L. Armus, K. A. Weaver, & J. Wang</i>	133
15 MICRON INFRARED SPACE OBSERVATORY OBSERVATIONS OF THE 1415+52 CANADA-FRANCE REDSHIFT SURVEY FIELD: THE COSMIC STAR FORMATION RATE AS DERIVED FROM DEEP ULTRAVIOLET, OPTICAL, MID-INFRARED, AND RADIO PHOTOMETRY <i>H. Flores, F. Hammer, T. X. Thuan, C. Cesarsky, F. X. Desert, A. Omont, S. J. Lilly, S. Eales, D. Crampton, & O. Le Feuvre</i>	151
REDSHIFT DETERMINATION IN THE X-RAY BAND OF GAMMA-RAY BURSTS <i>Gabriele Ghisellini, Francesco Haardt, Sergio Campana, Davide Lazzati, & Stefano Covino</i>	171
THE LARGE-SCALE $J = 3 \rightarrow 2$ AND $J = 2 \rightarrow 1$ CO EMISSION FROM M17 AND ITS IMPLICATIONS FOR EXTRAGALACTIC CO OBSERVATIONS <i>Christine D. Wilson, John E. Howe, & Michael L. Balogh</i>	177
BIAS IN THE CEPHEID PERIOD-LUMINOSITY RELATION <i>P. Lanoix, G. Paturel, & R. Garnier</i>	191
NUCLEOSYNTHESIS IN TYPE II SUPERNOVAE AND THE ABUNDANCES IN METAL-POOR STARS <i>Takayoshi Nakamura, Hideyuki Umeda, Ken'ichi Nomoto, Friedrich-Karl Thielemann, & Adam Burrows</i>	196
POPULATION DIAGRAM ANALYSIS OF MOLECULAR LINE EMISSION <i>Paul F. Goldsmith & William D. Langer</i>	212

CONTENTS

	Page
GRAVITATIONAL AND PARAMETRIC INSTABILITIES OF THE INTERSTELLAR MEDIUM IN WHICH THE ALFVEN WAVE TRAVELS <i>Naoya Fukuda & Tomoyuki Hanawa</i>	229
ON THE EXCHANGE OF KINETIC AND MAGNETIC ENERGY BETWEEN CLOUDS AND THE INTERSTELLAR MEDIUM <i>Francesco Miniati, T. W. Jones, & Dongsu Ryu</i>	245
NEAR-INFRARED SPECTROPOLARIMETRY OF THREE PROTOTYPE LOW-MASS YOUNG STELLAR OBJECTS IN THE TAURUS DARK CLOUD <i>Naoto Kobayashi, Tetsuya Nagata, Motohide Tamura, Taku Takeuchi, Hideki Takami, Yukiyasu Kobayashi, & Shuji Sato</i>	259
AN EXTINCTION STUDY OF THE TAURUS DARK CLOUD COMPLEX <i>Héctor G. Arce & Alyssa A. Goodman</i>	267
ATOMIC CARBON OBSERVATIONS OF SOUTHERN HEMISPHERE H II REGIONS <i>Maohai Huang, T. M. Bania, Alberto Bolatto, Richard A. Chamberlin, James G. Ingalls, James M. Jackson, Adair P. Lane, Antony A. Stark, Robert W. Wilson, & Gregory A. Wright</i>	285
INTERSTELLAR DEPLETION ONTO VERY SMALL DUST GRAINS <i>Joseph C. Weingartner & B. T. Draine</i>	295
ON THE THEORY OF PULSE PROPAGATION AND TWO-FREQUENCY FIELD STATISTICS IN IRREGULAR INTERSTELLAR PLASMAS <i>H. Lambert & B. J. Rickett</i>	302
CONTRIBUTION OF HIGH-MASS BLACK HOLES TO MERGERS OF COMPACT BINARIES <i>Hans A. Bethe & G. E. Brown</i>	321
RUNAWAY HEATING BY <i>r</i> -MODES OF NEUTRON STARS IN LOW-MASS X-RAY BINARIES <i>Yuri Levin</i>	331
CYCLOTRON LINE FEATURES FROM NEAR-CRITICAL MAGNETIC FIELDS: THE EFFECT OF OPTICAL DEPTH AND PLASMA GEOMETRY <i>Rafael A. Araya & Alice K. Harding</i>	337
LOW-LUMINOSITY STATES OF THE BLACK HOLE CANDIDATE GX 339-4. II. TIMING ANALYSIS <i>Michael A. Nowak, Jörn Wilms, & James B. Dove</i>	358
DO THE SPECIES OF SOFT X-RAY TRANSIENTS REVEAL BULK-MOTION INFLOW PHENOMENON? <i>Konstantin Borozdin, Mikhail Revnivtsev, Sergey Trudolyubov, Chris Shrader, & Lev Titarchuk</i>	370
ELECTRON-POSITRON PAIRS IN HOT ACCRETION FLOWS AND THIN DISK CORONAE <i>Ann A. Esin</i>	384
VACUUM BREAKDOWN NEAR A BLACK HOLE CHARGED BY HYPERCRITICAL ACCRETION <i>Aldo Treves & Roberto Turolla</i>	399
COMPARATIVE STUDY OF THE MASS DISTRIBUTION OF EXTREME-ULTRAVIOLET-SELECTED WHITE DWARFS <i>R. Napiwotzki, Paul J. Green, & Rex A. Saffer</i>	402
THE INTERACTING EARLY-TYPE BINARY BD +40°4220 (V729 CYgni): MODELING THE COLLIDING WINDS REGION <i>G. Rauw, J.-M. Vreux, & B. Bohannan</i>	416
PROPERTIES OF THE SECOND OUTBURST OF THE BURSTING PULSAR (GRO J1744-28) AS OBSERVED WITH BATSE <i>Peter M. Woods, Chryssa Kouveliotou, Jan van Paradijs, Michael S. Briggs, C. A. Wilson, Kim Deal, B. A. Harmon, G. J. Fishman, W. H. G. Lewin, & J. Kommers</i>	431
ASCA OBSERVATIONS OF GRO J1744-28 <i>M. Nishiuchi, K. Koyama, Y. Maeda, K. Asai, T. Dotani, H. Inoue, K. Mitsuda, F. Nagase, Y. Ueda, & C. Kouveliotou</i>	436
THE OUTBURSTS AND ORBIT OF THE ACCRETING PULSAR GS 1843-02 = 2S 1845-024 <i>Mark H. Finger, Lars Bildsten, Deeptha Chakrabarty, Thomas A. Prince, D. Matthew Scott, Colleen A. Wilson, Robert B. Wilson, & S. Nan Zhang</i>	449
SIMULTANEOUS DUAL-FREQUENCY OBSERVATIONS OF GIANT PULSES FROM THE CRAB PULSAR <i>Shauna Sallmen, D. C. Backer, T. H. Hankins, D. Moffett, & S. Lundgren</i>	460
THE COMPLETE "Z" TRACK OF CIRCINUS X-1 <i>Robert E. Shirey, Hale V. Bradt, & Alan M. Levine</i>	472

CONTENTS

v

	Page
MAGNETOHYDRODYNAMIC WAVES IN CORONAL MAGNETOSTATIC ARCADES <i>J. Terradas, R. Oliver, & J. L. Ballester</i>	488
ENERGETICS AND STRUCTURE OF MULTISPECIES SOLAR CORONAL LOOPS <i>Dawn D. Lenz</i>	497
THE RUN OF SUPERADIABATICITY IN STELLAR CONVECTION ZONES. II. EFFECT OF PHOTOSPHERIC CONVECTION ON SOLAR <i>p</i> -MODE FREQUENCIES <i>Pierre Demarque, D. B. Guenther, & Yong-Cheol Kim</i>	510
ANALYSIS OF EXTREME-ULTRAVIOLET OFF-LIMB SPECTRA OBTAINED WITH SUMER/SOHO: Ne vi/Mg vi EMISSION LINES <i>Bhola N. Dwivedi, Werner Curdt, & Klaus Wilhelm</i>	516

ABSTRACTS OF THE ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES, 1999 JUNE

CLUSTERING PROPERTIES OF LOW-REDSHIFT QSO ABSORPTION SYSTEMS TOWARD THE GALACTIC POLES <i>Daniel E. Vanden Berk, James T. Lauroesch, Chris Stoughton, Alexander S. Szalay, David C. Koo, Arlin P. S. Croots, J. Chris Blades, Adrian K. Melott, Brian J. Boyle, Thomas J. Broadhurst, & Donald G. York</i>	526
SURVEY FOR EMISSION-LINE GALAXIES: UNIVERSIDAD COMPLUTENSE DE MADRID LIST 3 <i>O. Alonso, C. E. Garcia-Dabó, J. Zamorano, J. Gellego, & M. Rego</i>	527
STAR CLUSTERS IN M33. I. DETECTION, MORPHOLOGY, AND PHOTOMETRY <i>Rupali Chandar, Luciana Bianchi, & Holland C. Ford</i>	527
THE FOURTH BATSE GAMMA-RAY BURST CATALOG (REVISED) <i>William S. Paciesas, Charles A. Meegan, Geoffrey N. Pendleton, Michael S. Briggs, Chryssa Kouveliotou, Thomas M. Koshut, John Patrick Lestrade, Michael L. McCullough, Jerome J. Brainerd, Jon Hakkila, William Henze, Robert D. Preece, Valerie Connaughton, R. Marc Kippen, Robert S. Mallozzi, Gerald J. Fishman, Georgia A. Richardson, & Maitrayee Saha</i>	527
THE ULYSSES SUPPLEMENT TO THE BATSE 4BR CATALOG OF COSMIC GAMMA-RAY BURSTS <i>K. Hurley, M. S. Briggs, R. M. Kippen, C. Kouveliotou, C. Meegan, G. Fishman, T. Cline, & M. Boer</i>	528
THE ERROR DISTRIBUTION OF BATSE GAMMA-RAY BURST LOCATIONS <i>Michael S. Briggs, Geoffrey N. Pendleton, R. Marc Kippen, J. J. Brainerd, Kevin Hurley, Valerie Connaughton, & Charles A. Meegan</i>	528
BERKELEY-ILLINOIS-MARYLAND SURVEY OF PROTOSTELLAR COLLAPSE CANDIDATES IN HCO ⁺ AND HCN LINES <i>Minho Choi, Jean-François Panis, & Neal J. Evans II</i>	529
ATOMIC TRANSITION PROBABILITIES FOR VISIBLE AND NEAR-ULTRAVIOLET SPECTRAL LINES IN CO I <i>D. E. Nitz, A. E. Kunau, K. L. Wilson, & L. R. Lentz</i>	529

1999 JUNE 1, NUMBER 2

THE BISPECTRUM AS A SIGNATURE OF GRAVITATIONAL INSTABILITY IN REDSHIFT SPACE <i>Roman Scoccimarro, H. M. P. Couchman, & Joshua A. Frieman</i>	531
THE <i>b</i> DISTRIBUTION AND THE VELOCITY STRUCTURE OF ABSORPTION PEAKS IN THE Ly α FOREST <i>Lam Hui & Robert E. Rutledge</i>	541
COSMIC MICROWAVE BACKGROUND ANISOTROPY CONSTRAINTS ON OPEN AND FLAT-A COLD DARK MATTER COSMOGENIES FROM UCSB SOUTH POLE, ARGO, MAX, WHITE DISH, AND SuZIE DATA <i>Bharat Ratra, Radosław Stompor, Ken Ganga, Graça Rocha, Naoshi Sugiyama, & Krzysztof M. Górski</i>	549
MEASUREMENTS OF Ω AND Λ FROM 42 HIGH-REDSHIFT SUPERNOVAE <i>S. Perlmutter, G. Aldering, G. Goldhaber, R. A. Knop, P. Nugent, P. G. Castro, S. Deustua, S. Fabbro, A. Goobar, D. E. Groom, I. M. Hook, A. G. Kim, M. Y. Kim, J. C. Lee, N. J. Nunes, R. Pain, C. R. Pennypacker, R. Quimby, C. Lidman, R. S. Ellis, M. Irwin, R. G. McMahon, P. Ruiz-Lapuente, N. Walton, B. Schaefer, B. J. Boyle, A. V. Filippenko, T. Matheson, A. S. Fruchter, N. Panagia, H. J. M. Newberg, W. J. Couch, & The Supernova Cosmology Project</i>	565
X-RAY MASS ESTIMATES AT $z \sim 0.3$ FOR THE CANADIAN NETWORK FOR OBSERVATIONAL COSMOLOGY CLUSTER SAMPLE <i>Aaron D. Lewis, E. Ellingson, Simon L. Morris, & R. G. Carlberg</i>	587
MEASURABILITY OF KINETIC TEMPERATURE FROM METAL ABSORPTION-LINE SPECTRA FORMED IN CHAOTIC MEDIA <i>Sergei A. Levshakov, Fumio Takahara, & Irina I. Agafonova</i>	609
SPECTROSCOPY OF 18 NEW NARROW-LINE SEYFERT 1 GALAXIES FROM THE ROSAT ALL-SKY SURVEY <i>D. W. Xu, J. Y. Wei, & J. Y. Hu</i>	622

CONTENTS

	Page
PROPERTIES OF THE INTRACLUSTER MEDIUM IN AN ENSEMBLE OF NEARBY GALAXY CLUSTERS <i>Joseph J. Mohr, Benjamin Mathiesen, & August E. Evrard</i>	627
DETAILED SURFACE PHOTOMETRY OF DWARF ELLIPTICAL AND DWARF S0 GALAXIES IN THE VIRGO CLUSTER <i>Barbara S. Ryden, Donald M. Terndrup, Richard W. Pogge, & Tod R. Lauer</i>	650
COMPARISONS OF VARIOUS MODEL FITS TO THE IRON LINE PROFILE IN MCG -6-30-15 <i>R. Misra & F. K. Sutaria</i>	661
STAR CLUSTERS IN M33. II. GLOBAL PROPERTIES <i>Rupali Chandar, Luciana Bianchi, & Holland C. Ford</i>	668
SPECTRA OF MASER RADIATION FROM A TURBULENT, CIRCUMNUCLEAR ACCRETION DISK. II. HIGH-VELOCITY FEATURES <i>B. K. Wallin, W. D. Watson, & H. W. Wyld</i>	682
OPTICAL AND NEAR-INFRARED OBSERVATIONS OF THE AFTERGLOW OF GRB 980329 FROM 15 HOURS TO 10 DAYS <i>Daniel E. Reichart, Donald Q. Lamb, Mark R. Metzger, Jean M. Quashnock, David M. Cole, Francisco J. Castander, Sylvio Klose, James E. Rhoads, Andrew S. Fruchter, Asantha R. Cooray, & Daniel E. Vanden Berk</i>	692
RECONNECTION IN A WEAKLY STOCHASTIC FIELD <i>A. Lazarian & Ethan T. Vishniac</i>	700
OPTIMAL MICROLENSING OBSERVATIONS <i>Andrew Gould</i>	719
ULTRA-HIGH-ENERGY NEUTRINO SCATTERING ONTO RELIC LIGHT NEUTRINOS IN THE GALACTIC HALO AS A POSSIBLE SOURCE OF THE HIGHEST ENERGY EXTRAGALACTIC COSMIC RAYS <i>D. Fargion, B. Mele, & A. Salis</i>	725
A CAUSTIC VIEW OF HALO MICROLENSING <i>Eamonn J. Kerins & N. Wyn Evans</i>	734
DUST IN THE IONIZED MEDIUM OF THE GALAXY: GHRS MEASUREMENTS OF Al III AND S III <i>J. Christopher Howk & Blair D. Savage</i>	746
SHAPING BIPOLAR AND ELLIPTICAL PLANETARY NEBULAE: EFFECTS OF STELLAR ROTATION, PHOTOIONIZATION HEATING, AND MAGNETIC FIELDS <i>Guillermo Garcia-Segura, Norbert Langer, Michał Różyczka, & José Franco</i>	767
MORPHOLOGY AND COMPOSITION OF THE HELIX NEBULA <i>R. B. C. Henry, K. B. Kwitter, & R. J. Dufour</i>	782
HIGH-ANGULAR RESOLUTION MILLIMETER-WAVE AND NEAR-INFRARED IMAGING OF THE ULTRACOMPACT H II REGION G29.96-0.02 <i>Preethi Pratap, S. T. Megeath, & Edwin A. Bergin</i>	799
SUBMILLIMETER IMAGING OF T TAURI'S CIRCUMBINARY DISK AND THE DISCOVERY OF A PROTOSTAR IN HIND'S NEBULA <i>David A. Weintraub, Göran Sandell, Tracy L. Huard, Joel H. Kastner, Mario E. van den Ancker, & Rens Waters</i>	819
COALESCENCE AND STAR FORMATION IN COLLAPSING FLATTENED SYSTEMS <i>Stephen D. Murray, Daisy A. Raymondson, & Rachel A. Urbanski</i>	829
FAR-ULTRAVIOLET SPACE TELESCOPE IMAGING SPECTROMETER SPECTRA OF THE WHITE DWARF REJ 1032+532. I. INTERSTELLAR LINE OF SIGHT <i>J. B. Holberg, F. C. Bruhwiler, M. A. Barstow, & P. D. Dobbie</i>	841
FAR-ULTRAVIOLET SPACE TELESCOPE IMAGING SPECTROGRAPH SPECTRA OF THE WHITE DWARF REJ 1032+532. II. STELLAR SPECTRUM <i>J. B. Holberg, M. A. Barstow, F. C. Bruhwiler, I. Hubeny, & E. M. Green</i>	850
GENERAL RELATIVISTIC AUGMENTATION OF NEUTRINO PAIR ANNIHILATION ENERGY DEPOSITION NEAR NEUTRON STARS <i>Jay D. Salmonson & James R. Wilson</i>	859
A MULTIWAVELENGTH CAMPAIGN ON γ CASSIOPEIAE. III. THE CASE FOR MAGNETICALLY CONTROLLED CIRCUMSTELLAR KINEMATICS <i>Myron A. Smith & Richard D. Robinson</i>	866
NEW 3 MICRON SPECTRA OF YOUNG STELLAR OBJECTS WITH H ₂ O ICE BANDS <i>T. Y. Brooke, K. Sellgren, & T. R. Geballe</i>	883

CONTENTS

vii

	Page
PHYSICAL PROCESSES IN THE ATMOSPHERE OF COOL WHITE DWARFS AND THE NATURE OF THE NON-DA GAP <i>A. Malo, F. Wesemael, & P. Bergeron</i>	901
Spherical Bondi Accretion onto a Magnetic Dipole <i>Yu. M. Toropin, O. D. Toropina, V. V. Savelyev, M. M. Romanova, V. M. Chechetkin, & R. V. E. Lovelace</i>	906
Discovery of a Magnetic White Dwarf in the Symbiotic Binary Z Andromedae <i>J. L. Sokoloski & Lars Bildsten</i>	919
Modeling RR Telescopii Through the Evolution of the Spectra <i>Marcella Contini & Liliana Formiggini</i>	925
Different Types of X-Ray Bursts from GRS 1915+105 and Their Origin <i>J. S. Yadav, A. R. Rao, P. C. Agrawal, B. Paul, S. Seetha, & K. Kasturirangan</i>	935
Discovery of Correlated Behavior Between the Hard X-Ray and the Radio Bands in Cygnus X-3 <i>M. L. McCollough, C. R. Robinson, S. N. Zhang, B. A. Harmon, R. M. Hjellming, E. B. Waltman, R. S. Foster, F. D. Ghigo, M. S. Briggs, G. N. Pendleton, & K. J. Johnston</i>	951
Rossi X-Ray Timing Explorer Observations of the X-Ray Pulsar XTE J1855-026: A Possible New Supergiant System <i>R. H. D. Corbet, F. E. Marshall, A. G. Peele, & T. Takeshima</i>	956
Causal Relations between H α Loop Emergences and Soft X-Ray Brightenings <i>Keiji Yoshimura & Hiroki Kurokawa</i>	964
Deconvolution of Directly Precipitating and Trap-Precipitating Electrons in Solar Flare Hard X-Rays. III. YOHKOH Hard X-Ray Telescope Data Analysis <i>Markus J. Aschwanden, Lyndsay Fletcher, Taro Sakao, Takeo Kosugi, & Hugh Hudson</i>	977
Unstable Coronal Loops: Numerical Simulations with Predicted Observational Signatures <i>T. D. Arber, A. W. Longbottom, & R. A. M. Van der Linden</i>	990
Quiescent Prominence Equilibria <i>Tzihong Chiueh & Lupin C. C. Lin</i>	1002
Dynamics of the Solar Chromosphere. II. Ca II H _{2Y} and K _{2Y} Grains Versus Internetwork Fields <i>B. W. Lites, R. J. Rutten, & T. E. Berger</i>	1013
Silicate Mineralogy of the Dust in the Inner Coma of Comet C/1995 01 (HALE-BOPP) Pre- and Postperihelion <i>Diane H. Wooden, David E. Harker, Charles E. Woodward, Harold M. Butner, Chiyo Koike, Fred C. Witteborn, & Craig W. McMurtry</i>	1034
ERRATUM	
Resonant Tides in Close Orbiting Planets <i>S. H. Lubow, C. A. Tout, & M. Livio</i>	1059
NEW INSTRUCTIONS TO AUTHORS—REVISED 1997 JUNE 1	i



